THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT E. FONTANA, JR.
CHERNGYE HWANG,
VLAD J. NOVOTNY,
TIMOTHY C. REILEY,
CELIA E. YEACK-SCRANTON
and CLINTON D. SNYDER

Appeal No. 96-2513
Application 08/037,064[1]

ON BRIEF

Before URYNOWICZ, THOMAS and LEE, Administrative Patent Judges.

LEE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-8, 12-14, 23-26 and 29-31

[1] Application for patent filed March 25, 1993.

under 35 U.S.C. § 103 as being unpatentable over prior art. No claim has been allowed.

References relied on by the Examiner

Grill et al. (Grill)	5,159,508	Oct. 27, 1992
Oonishi et al. (Oonishi) (Japanese Kokai Patent Application)	55-86773	June 30, 1980
European Patent Application (EP)	0 508 565 A2	Oct. 14, 1992

F.M. Cullen et al. (Cullen), "Wear-Resistant Surface for Magnetic Heads" IBM Technical Disclosure Bulletin, Vol. 17, No. 9, Page 2635, (February 1975).

The Rejections on Appeal

Claims 1-5, 13, 14, 23, 24, 30 and 31 stand rejected under 35 U.S.C. § 103 as being unpatentable over the EP Reference, Cullen, and Oonishi.

Claims 6-8, 12, 25, 26 and 29 stand rejected under 35 U.S.C. § 103 as being unpatentable over the EP Reference, Cullen, Oonishi, and Grill.

The appellants have stated (Br. at 5) that claims 1-8, 12-14, 23-26 and 29-31 stand or fall together.

The Invention

The invention is directed to a head assembly for use in a contact recording rigid disk file. Representative claim 23 reads as follow:

23. A head assembly for use in a contact recording rigid disk file comprising:

a carrier having a wear pad for contact with the disk, the wear pad comprising a plasma-enhanced chemical vapor deposited or sputter-deposited homogenous outer wear layer and a plasma-enhanced chemical vapor deposited or sputter-deposited homogenous inner wear layer in contact with the outer layer and having a wear resistance greater than that of the outer layer; and

a head supported within the carrier for reading or writing data on the disk, the head having a pole piece extending through the inner wear layer and into the outer wear layer.

Opinion

The rejection of claims 1-8, 12-14, 23-26 and 29-31 cannot be sustained.

With respect to the EP Reference, the appellants assert (Br. at 5):

> The wear material 34c is deposited on the upper surface of the end of the head structure on top of the pole 32c (Fig. 9). This is explained at column 11, lines 35-40, of EP [the European Reference]. Thus, even if this layer were made into two layers, or made to have wear resistance varying with thickness, as suggested in the Section 103 rejection, it would have no effect on the wear of the head 34 contacting disk 22 in Fig. 4B. (Emphasis in original.)

The appellants' position is misplaced. The contact pad 34 includes not just part 34c, but also parts 34a and 34b. Together, they surround the downwardly extending tip 32a of the pole structure of the recording head (see column 8, lines 17-31). As can be seen in Figure 5A, which shows a fragmentary view from

the media-contact side of the recording head, the contact pad 34 totally surrounds the pole tip portion 32a (see also Figure C). Thus, except for the contact pad's not having a dual layer construction, the configuration is similar to the appellants' structure and readily satisfies that required by claim 23:

> "a head supported within the carrier for reading or writing data on the disk, the head having a pole piece extending through the inner wear layer and into the outer wear layer."

We reject the argument that even if contact pad layer 34 were made of two layers having different wear resistance, it would have no effect.

But in order to support the case for prima facie obviousness, the prior art must reasonably suggest forming the contact pad 34 as two separate layers, a plasma-enhanced chemical vapor deposited or sputter-deposited homogenous outer layer and a plasma-enhanced chemical vapor deposited or sputter-deposited homogenous inner layer. Additionally, the wear resistance of the inner layer must be higher than that of the outer layer. The EP Reference does not satisfy either of these claim requirements.

With regard to Cullen, the examiner correctly found (answer at 3):

> Cullen et al shows a wear resistant surface for magnetic [recording] heads wherein the protective layer wears rapidly at first but then the wear rate drops

> dramatically (layer of diamond particles and a layer of metal matrix).

The wear rate is rapid before the embedded diamond particles have been reached, and then the wear rate drops off dramatically since "[t]he rate of wear of the diamond is close to zero" (Cullen at 2635).

But the problem is that embedded diamond particles and the metal matrix do not form a plasma-enhanced chemical vapor deposited or sputter-deposited homogenous inner and outer layer. The examiner specifically acknowledged in Paper No. 6, page 3, lines 14-15, that Cullen discloses "substantially one heterogenous layer" (Emphasis added). Moreover, the examiner has pointed to no evidence that Cullen's metal matrix and diamond particles are formed by plasma-enhanced chemical vapor deposition or sputtering. The examiner has failed to demonstrate a reasonable motivation or suggestion from the prior art to form the contact pad 34 of the EP Reference as two separate layers, each being homogenous and plasma-enhanced chemical vapor deposited or sputter-deposited. We note further that zero or minimum abrasion appears to be the goal of Cullen, rather than two levels of wear. The fact that an initial rapid wear level exists appears to be mere incidental and due to the process used for embedding diamond particles in the metal matrix.

The appellants have not challenged the examiner's finding (Paper No. 9, page 3) that "Oonishi et al shows a thermal recording head where wear layer 18 can be a composite layer made up of more than one layer." The appellants state (Br. at 6): "The full text translation of Oonishi (page 4, lines 28-31) states that this layer 18 is 'single or multiple antifriction layer 18 composed of SiC, SiO_2, Si_3N_4, Al_2O_3, BN, or the like.' (Emphasis added.)." In that regard, the appellants refer to the English translation of Oonishi which is included in the appendix to the appeal brief, and not to the translation caused to be made by the U.S. Patent and Trademark Office in June 1996 (copy enclosed).[2]

The appellants do contend (Br. at 6), however, that Oonishi is directed to non-analogous art, specifically, the art of paper printing technology, and not magnetic disk recording. Indeed, Oonishi describes a thermal recording head for printing on thermally sensitive paper. In the appeal brief at 6, the appellants point out (Br. at 6) that magnetic disk recording and

[2] The latter states (page 4): "Finally, abrasion resistance layer [illegible] composed of a single layer or composite layer of SiC, SiO_2, Si_3N_4, sic [sic] Al_2O_3, BN, etc. is provided according to the aforementioned spray coating method and thermal recording head [illegible] of the present invention is completed."

recording on thermally sensitive paper are directed to different fields of endeavor. The examiner has not taken a contrary position or asserted otherwise and we see no reason to disagree with the appellants.

The appellants also have reasonably questioned (Br. at 6) the pertinence of Oonishi with respect to the problem the appellants' invention was intended to solve, i.e., initial alignment of the magnetic recording head's pole structure with the recording disk. The examiner has not explained why an antifriction layer on the surface of a thermal recording head for printing on thermally sensitive paper would be reasonably pertinent to that problem and we do not think it is. Note that in Oonishi's thermal recording head for printing on thermally sensitive paper, the antifriction layer 6 or 18 do not have any pole piece or other structure extending therethrough as is required by appellants' claims.

Evidently, the examiner has not maintained that Oonishi constitutes analogous art. Note that in response to the non-analogous art argument of the appellants, the examiner (answer at 8) stated:

> It is the examiner's position that the reference to Oonishi (sic, Onishi) has been relied upon to show that multiple wear layer deposition techniques exist. Regardless of the field of art that Oonishi (sic,

> Onishi) is in, the use of multiple wear layered pad formed by depositing various types of wear materials is well known in the thermal recording head art. Therefore, the depositing techniques and the capability to make multiple layered wear pads existed before Appellants' invention, albeit in a different art.

The fact that technology existed such that the prior art may be capable of being modified in the manner suggested by the Examiner, however, does not make the modification obvious unless the prior art also suggested the desirability of the modification. See, e.g., In re Fritch, 972 F.2d 1260, 1266 n. 14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992). The examiner has presented no basis to conclude that the prior art relied upon reasonably would have led one with ordinary skill in the art to construct the contact pad 34 of the magnetic disk recording head of the EP Reference with a homogenous inner layer and a homogenous outer layer, each being plasma-enhanced chemical vapor deposited or sputter-deposited.

On page 4 of the examiner's answer, the examiner stated that "one of ordinary skill in the art would have been motivated to use two wear layers of varying wear resistance in a magnetic head since doing this would provide the head with increasing wear resistance over time, allowing the head to adapt and conform to disk surface." That also happens to be the appellants' motivation and objective for the claimed invention. For reasons already discussed above, we find the examiner's rationale to be based on hindsight in light of the appellants' disclosure, rather than a reasonable suggestion stemming from the prior art.

Dependent claims 6-8, 12, 25, 26 and 29 have been rejected over the EP Reference, Cullen, Oonishi, and further in view of Grill. Grill discloses a protective coating for the magnetic slider structure which supports a thin-film magnetic read/write head (column 3, lines 14-16; column 4, lines 43-59). In column 4, lines 61-64, Grill states:

> The protective coating 22 (FIGS. 5 and 6) comprises two layers, the first layer being a suitable adhesion layer 24 and the second layer being a thin layer of amorphous hydrogenated carbon 26.

For several reasons, Grill does not make up for the deficiencies of the combination of the EP Reference, Cullen and Oonishi. First, the wear resistance of Grill's adhesion layer is not described in Grill because its purpose is to bond the outer layer of hydrogenated carbon to the magnetic head slider. Grill does not reasonably suggest that the wear resistance of the adhesion layer should be higher than that of the hydrogenated carbon layer. Secondly, Grill's adhesion layer does not serve the same purpose as Cullen's embedded diamond particles. Thus, the fact that Cullen's diamond particles have a higher wear resistance than the exposed metal matrix would not have suggested that Grill's adhesion layer should have a higher wear resistance than the hydrogenated carbon layer. Third, Grill's magnetic recording head has no pole piece which extends through the protective layer 22 like that required by the claims and shown in the EP Reference. Grill indicates that without the protective layer, contact between the head and the recording medium is "inadvertent" (column 4, line 54). It is unlike the claimed invention which is directed to a contact recording rigid disk

file. We see no basis to conclude that the EP Reference, Cullen, Oonishi, and Grill collectively would have reasonably suggested that contact pad 34 of the EP Reference should be made of two homogenous layers, each being plasma-enhanced chemical vapor deposited or sputter-deposited and that the inner layer should have a higher wear resistance than the outer layer.

The EP Reference, Cullen, Oonishi and Grill each discloses something which at least seems to correspond to a claim feature. However, one cannot use hindsight reconstruction to selectively pick and choose among isolated disclosures in the prior art establish a case for obviousness. In re Fine, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988). Here, for reasons discussed above, the examiner lacks reasonable motivation and suggestion stemming from the prior art to make the modifications necessary to result in the appellants' claimed invention.

Accordingly, the rejection of claims 1-8, 12-14, 23-26 and 29-31 cannot be sustained.

Conclusion

The rejection of claims 1-5, 13, 14, 23, 24, 30 and 31 under 35 U.S.C. § 103 as being unpatentable over the EP Reference, Cullen and Oonishi is reversed.

The rejection of claims 6-8, 12, 25, 26 and 29 under 35 U.S.C. § 103 as being unpatentable over the EP Reference, Cullen, Oonishi, and Grill is reversed.

REVERSED

STANLEY M. URYNOWICZ, Jr. Administrative Patent Judge	)	
JAMES D. THOMAS Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
JAMESON LEE Administrative Patent Judge	)	

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